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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,697	04/05/2004	Richard Scott Bourgeois	126533-1	9731

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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08/13/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/816,697	Applicant(s) BOURGEOIS ET AL.	
	Examiner Tony Chuo	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-26 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26 and 30-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/29/08 has been entered.

Response to Amendment

2. Claims 19-26 and 30-35 are currently pending. Claims 1-18, 27-29, 36, and 37 are cancelled. The amended claims do overcome the previously stated 102 and 103 rejections. However, upon further consideration, claims 19-26 and 30-35 are rejected under the following new 112, 102, and 103 rejections.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 20-22 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 20-22 recites the limitation "said at least one hollow manifold" in line 2.

There is insufficient antecedent basis for this limitation in the claim.

6. Claim 25 recites the limitation "said strain" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 19-26 and 30-34 are rejected under 35 U.S.C. 102(a) as being anticipated by Gorbell (US 2003/0077500).

Regarding claim 19, 32, and 33, the Gorbell reference discloses a fuel cell stack comprising: a plurality of fuel cell units that inherently comprises a first fuel cell assembly and a second fuel cell assembly electrically coupled together such that sealed manifolds extend between the first and second fuel cell assemblies, each fuel cell assembly comprising: an anode interconnect "32" (hollow manifold) comprising a top wall "36" and a bottom wall "38", wherein the anode interconnect includes a sealed fuel passage for allowing fuel to enter and exit the anode interconnect; and a ceramic fuel cell element "12" comprising an anode, a cathode, and an electrolyte disposed there between, wherein a portion of the bottom wall "38" of the anode interconnect forms a side wall in close contact with the fuel cell such that the fuel cell is coplanar with the

anode interconnect and wherein the bottom wall "38" extending between the fuel cell and the sealed fuel passage includes a resilient seal "14" that is capable of accommodating thermal expansion of the fuel cell in the same plane as the anode interconnect (See Figures 3 and 5, paragraphs [0026],[0027],[0035]).

Examiner's note: The amended claim 19 does not require the side wall to be in direct contact with the fuel cell and also does not require the compliant structure to be part of one of the top and bottom walls.

Regarding claim 20, it also discloses a cathode flow channel coupled to the cathode interconnect "34" of the first fuel cell assembly and the second fuel cell assembly that is configured for directing an oxidant between the first fuel cell assembly and the second fuel cell assembly (See Figure 5, and paragraph [0035]).

Regarding claim 21, it also discloses an anode interconnect "32" that is substantially rectangular (See Figure 3).

Regarding claim 22, it also discloses an anode interconnect that further comprises an electrically conductive material "54" (See paragraph [0040]).

Regarding claims 23 and 24, it also discloses a solid oxide fuel cell (See paragraph [0032]).

Regarding claim 25, the limitation "said strain is developed due to thermal expansion" is construed as being intended use and therefore is not given patentable weight because the resilient seal taught by Gorbell is capable of performing the intended use.

Regarding claims 26, 30, and 31, it also discloses interconnect plates that are welded which implies that the interconnect plates are metal (See paragraph [0037]). Since the fuel cell is made of a ceramic material and the interconnect top and bottom plates are made of metal, it is inherent that the thermal coefficients of expansion of the fuel cell and the top and bottom walls are different.

Regarding claim 34, it also discloses a resilient seal "14" that is located adjacent to the fuel cell element and the sealed passage (See Figure 5).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gorbell (US 2003/0077500) in view of Sasaki et al (US 5378247). The Gorbell reference is applied to claim 19 for reasons stated above.

However, Gorbell does not expressly teach a compliant structure that comprises a corrugated structure. The Sasaki reference discloses an anode interconnect comprising a compliant structure "25" that is a corrugated structure (See Figure 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Gorbell fuel cell stack to include a compliant

structure that comprises a corrugated structure in order to utilize a structure that further reduces the stress that results from the inherent thermal expansion of the fuel cell during the operation of the fuel cell.

Response to Arguments

11. Applicant's arguments with respect to claims 19-26 and 30-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571)272-0717. The examiner can normally be reached on M-F, 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795